

Appl. No. 10/815,401  
Amdt. Dated October 24, 2007  
Reply to Office Action of July 25, 2007

### **REMARKS/ARGUMENTS**

Claims 1-40 are pending in the present application.

This Amendment is in response to the Office Action mailed July 25, 2007. In the Office Action, the Examiner rejected claims 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 under 35 U.S.C. §102(e); and claims 2, 9, 14, 21, 26, and 33 under 35 U.S.C. §103(a). Reconsideration in light of the amendments and remarks made herein is respectfully requested.

#### ***Rejection Under 35 U.S.C. § 102***

In the Office Action, the Examiner rejected claims 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 2004/0174829 issued to Ayyagari ("Ayyagari"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a prima facie case of anticipation.

Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller. The network in its operational mode consists of host nodes, a designated controller for the network called the Central Coordinator (CCo), and where appropriate, a set of Proxy Coordinators (PCo) to communicate with nodes that cannot directly communicate (in one link) with the CCo, or with other nodes in the network (Ayyagari, par. [0025]). The CCo periodically initiates a node discovery process. Every known node is allowed to transmit a DISCOVERY\_MSG message in a contention free mode, using an allocation (frequencies and time slots) granted by the CCo. The DISCOVERY\_MSG can simply contain the MAC address/TBI (Temporary Equipment Identifier) of the source device, or it may also contain the Frame number and time slots for future contention periods that follow the end of the Discovery interval (Ayyagari, par. [0055], lines 1-9). Activity Indicator is an optional parameter indicating how busy a device is, in terms of its duty cycle (Ayyagari, par. [0064], lines 12).

Ayyagari does not disclose, either expressly or inherently, at least one of: (1) a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description; (2) an information module coupled to the frame module to manage the information; and (3) a communication module coupled to the

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frame module and the information module to manage communication between the local node and a remote node in a second network using the information, as recited in claim 1.

First, Ayyagari merely discloses an Activity Indicator, which is a parameter in the DISCOVERY\_MSG (Ayyagari, par. [0064], lines 12), not a network state information, as recited claim 1. An Activity Indicator is not the same as the network state information. An Activity Indicator indicates how busy a device is, in terms of its duty cycle (Ayyagari, par. [0064], lines 12-14) such as whether or not it is transmitting or receiving. The Activity indicator therefore only indicates the activities engaged or performed by a device. Such activities are not related to the network because the device is connected to a network and thus, is not a network. Accordingly, an activity indicator cannot indicate network state information.

Second, Ayyagari merely discloses that every known node transmits a DISCOVERY\_MSG message (Ayyagari, par. [0055], lines 1-9), not an information module to manage the information, as recited in claim 1. Given that the Examiner alleges that "the information" from the first element is disclosed by the contents of the DISCOVERY\_MSG, citing to par. [0055], lines 1-9, and Figs. 5-6 (Office Action, page 2, par. 2), the DISCOVERY\_MSG cannot contain both discovery information and network state information.

Furthermore, the cited excerpt merely discloses CCo/known node transmitting three items: MAC address/TEI, frame number, and time slot (Ayyagari, par. [0055], lines 1-9). Transmitting the information is not the same as managing the information. In contrast, as supported in the specifications (Specifications, par. [0054]-[0068]) and recited in claims 18 and 19, managing information includes collecting the information, translating the discovery information, determining if the local node participates in the communication, synchronizing the collected information with other information from other local nodes in the first network, storing entries regarding information extracted from a received remote frame, and updating the entries. Transmitting the above three items merely performs the physical transmission of the items. It does not collect the items. In fact, transmitting is the opposite of collecting because it is an act of distributing. Among other things, transmitting alone does not translate information. The Examiner interprets the CCo or every known node as the frame module and as the information module (Office Action, page 2, par. 2). However, the CCo/known node cannot be both frame module and information module because they perform different functions as discussed above.

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Third, Ayyagari merely discloses viable interconnections between nodes relating to two illustrative organizations, such as interconnection 40 between C and D (Ayyagari, par. [0043], lines 7-10; Fig. 1, ref. 40), not a communication module coupled to the frame module and the information module to manage communication using the information, as recited in claim 1. A viable interconnection is a communication link that may be created between nodes C and D. In contrast, communication module 230 manages communication between the IW node and a remote node in a second IW network and receives the IW information from the information module 220 (See, for example, Specifications, par. [0035]). A communication link is merely a connection to connect two nodes. It does not have the ability to manage the communication between the two nodes.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Vergegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to show that Ayyagari teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

Therefore, Applicant believes that independent claims 1, 13, 25, and 37 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §102(c) be withdrawn.

#### ***Rejection Under 35 U.S.C. § 103***

In the Office Action, the Examiner rejected claims 2, 9, 14, 21, 26, and 33 under 35 U.S.C. §103(a) as being unpatentable over Ayyagari in view of U.S. Patent No. 6,826,165 issued to Meier et al. ("Meier"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

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combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP §2143, p. 2100-129 (8th Ed., Rev. 2, May 2004)*. Applicant respectfully submits that there is no suggestion or motivation to combine their teachings, and thus no *prima facie* case of obviousness has been established.

Furthermore, the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated: "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." *MPEP 2141*. In *KSR International Co. vs. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) (Kennedy, J.), the Court explained that "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." The Court further required that an explicit analysis for this reason must be made. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR 127 S.Ct.* at 1741, quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In the instant case, Applicant respectfully submits that there are significant differences between the cited references and the claimed invention and there is no apparent reason to combine the known elements in the manner as claimed, and thus no *prima facie* case of obviousness has been established.

Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller as discussed above. Moreover, Ayyagari discloses that DISCOVERY\_MSG is broadcast by each node as a part of the DISCOVERY process. The message contains the MAC address or TEI of the transmitting device. The message also contains the allocations for Contention Channels that will follow the end of the topology discovery period. This information is derived by the node from the START\_DISCOVERY\_MSG (Ayyagari, par. [0064]). The DISCOVERY\_MSG, can have an additional parameter called ACTIVITY

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INDICATOR which is a percentage of time, the device is likely to spend transmitting/receiving data for purposes other than network control. The node with the lowest ACTIVITY\_INDICATOR may be chosen as the CCo in conjunction with other criteria (Ayyagari, par. [0121]).

Meier discloses a radio frequency local area network. The attached gateway node 20 periodically broadcasts a specific type of polling packet referred to as "HELLO packets". The HELLO packets can be broadcast using known methods of communicating via radio frequency (RF) link or via a direct wire link (Meier, col. 3, lines 46-50).

Ayyagari and Meier, taken alone or in any combination, do not disclose or render obvious at least one of: (1) a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description; (2) an information module coupled to the frame module to manage the information; (3) a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information; (4) the frame module comprises a frame builder to build the frame containing the information; (5) a frame transmitter coupled to the frame builder to transmit the frame to another local node in the first network or the remote node in the second network; (6) a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node; and (7) a frame receiver to receive another frame from another local node in the first network or to receive a remote frame from the remote node, as recited in claim 2.

As discussed above, Ayyagari does not disclose or render obvious elements (1), (2), and (3) as above. Accordingly, a combination of Ayyagari with any other references in rejecting claims 2, 9, 14, 21, 26, and 33 is improper.

In addition, Ayyagari merely discloses a DISCOVERY\_MSG sent by each node as part of the DISCOVERY process (Ayyagari, par. [0064]), not a frame builder to build the frame containing the information, as recited in claim 2. As discussed above, CCo, which the Examiner interprets as the frame module (Office Action, page 2, par. 2), merely transmits in the DISCOVERY\_MSG: MAC address/TEI, allocations for Contention Channels and an

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**ACTIVITY INDICATOR.** None of these is related to, or includes, a frame builder to build the information contained in the **DISCOVERY\_MSG**.

Furthermore, Ayyagari merely discloses the **ACTIVITY INDICATOR** which indicates a percentage of time the device is likely to spend transmitting/receiving data (Ayyagari, par. [0121]), not a frame transmitter to transmit the frame or a frame receiver to receive another frame, as recited in claim 2. As discussed above, the **ACTIVITY INDICATOR** indicates how busy a node is likely to be (Ayyagari, par. [0121]). Indicating the percentage of time a device is likely to be transmitting or receiving data is not the same as actually transmitting or receiving a frame as in the claimed invention.

Moreover, Meier merely discloses attached gateway node 20 periodically broadcasts a specific type of polling packet referred to as "HELLO packets" (Meier, col. 3, lines 46-50), not a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node, as recited in claim 2. **HELLO** packets merely contain the address of the sender the hopping distance that the sender is from the root, a source address, a count of nodes in the subtree which flow through that bridge, and a list of system parameters (Meier, col. 3, lines 56-59). A bridge listens for **HELLO** packets to learn which nodes are attached to a spanning tree (Meier, col. 4, lines 3-7). Therefore, the **HELLO** packets provide information (to the bridge), not requesting for information.

Regarding claim 9, the Examiner contends that Meier discloses the use of determining the distance from the root node, citing Meier, col. 5, lines 14-30 (Office Action, page 7, lines 19-20). However, the cited excerpt merely discloses how to determine the distance between a child node and a root node, not evaluating an alternate layout based on a relationship between interference and channel distance. Furthermore, merely computing the distance does not provide the relationship between the interference and the channel distance.

The Examiner failed to establish a prima facie case of obviousness and failed to show there is teaching, suggestion, or motivation to combine the references. When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: (A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention;

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and (D) Reasonable expectation of success is the standard with which obviousness is determined. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). "When determining the patentability of a claimed invention which combined two known elements, 'the question is whether there is something in the prior art as a whole suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, 974 F.2d 1309, 1312 (Fed. Cir. 1992), 24 USPQ2d 1040; Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ (BNA) 481, 488 (Fed. Cir. 1984). To defeat patentability based on obviousness, the suggestion to make the new product having the claimed characteristics must come from the prior art, not from the hindsight knowledge of the invention. Interconnect Planning Corp. v. Feil, 744 F.2d 1132, 1143, 227 USPQ (BNA) 543, 551 (Fed. Cir. 1985). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the Examiner to show a motivation to combine the references that create the case of obviousness. In other words, the Examiner must show reasons that a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the prior elements from the cited prior references for combination in the manner claimed. In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1996), 47 USPQ 2d (BNA) 1453. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973. (Bd.Pat.App.&Inter. 1985). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Furthermore, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." In re Mills 916 F.2d at 682, 16 USPQ2d at 1432; In re Fritch, 972 F.2d 1260 (Fed. Cir. 1992), 23 USPQ2d 1780.

Moreover, the Examiner failed to establish the factual inquires in the three-pronged test as required by the *Graham* factual inquires. There are significant differences between the cited references and the claimed invention as discussed above. Furthermore, the Examiner has not

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made an explicit analysis on the apparent reason to combine the known elements in the fashion in the claimed invention. Accordingly, there is no apparent reason to combine the teachings of Ayyagari and Meier.

In the present invention, the cited references do not expressly or implicitly disclose any of the above elements. In addition, the Examiner failed to present a convincing line of reasoning as to why a combination of Ayyagari and Meier is an obvious application of inter-wireless interactions using user discovery for ad-hoc environments, or an explicit analysis on the apparent reason to combine Ayyagari and Meier in the manner as claimed.

Therefore, Applicant believes that independent claims 1, 13, 25, and 37 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §103(a) be withdrawn.



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**Conclusion**

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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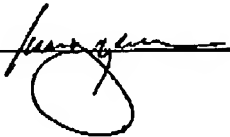
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